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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,661	12/21/2001	Robin E. Wright	56076US002	2699
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3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
			EXAMINER BERMAN, SUSAN W	
			ART UNIT 1711	PAPER NUMBER

DATE MAILED: 11/13/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,661

Applicant(s)

WRIGHT, ROBIN E.

Examiner

Susan W Berman

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Palazzotto et al (5,521,227). Palazzotto et al disclose a multiple photopolymerization process using light of various wavelengths, such as providing different light sources of different wavelengths. Irradiation with visible light followed by irradiation with UV light is taught in Examples 1-10. See column 12, lines 1-64, column 13, lines 12-33, column 16, line 3, to column 17, line 5, column 17, lines 46-67, column 18, lines 8-14, lines 27-36, and column 20, lines 36-45. Palazzotto et al do not mention whether the irradiation with UV light has a maximum spectral output occurring at a wavelength of less than 200, but since UV light includes wavelengths of 10-390 nm it is expected that a maximum spectral output at a wavelength less than 200 is inherent to the UV light source employed for photopolymerization in the disclosure of Palazzotto et al. The limitations of claims 13 and 14 are considered to be inherent features of the disclosed process, in the absence of evidence to the contrary.

Claims 1-12 and 15-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams et al (5,462,797). Williams et al disclose a multiple photopolymerization process using light of various wavelengths, such as providing different light sources of different wavelengths. Irradiation with visible light followed by irradiation with UV light is taught in Examples 1-8. See column 14, lines 8-67, column 15, lines 24-44, column 17, line 21, to column 18, line 30, column 19, lines 2-36, and column 22, lines 3-30. Williams et al do not mention whether the irradiation with UV light has a maximum spectral output occurring at a wavelength of less than 200, but since UV light includes wavelengths of 10-390 nm it is

Art Unit: 1711

expected that a maximum spectral output at a wavelength less than 200 is inherent to the UV light source employed for photopolymerization in the disclosure of Williams et al.

Claims 1, 2, 15 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Matthews et al (4,313,969). See the Abstract, column 3, lines 14-56, column 4, lines 27-43, column 5, lines 41-54, and claim 1. This rejection is based on the assumption that the UV curable acrylourethane coating employed includes a free radical photoinitiator, although not mentioned by Matthews et al, because the compositions is UV curable and would be expected to contain a photoinitiator for the purpose of UV initiation of curing.

Claims 1-8, 10, 11 and 13-21 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 92/15651. WO '651 teaches sequential irradiation using low intensity irradiation followed by high intensity irradiation for production of acrylic based adhesives. The first stage is preferably performed with fluorescent black lamps having an output between 300-400 nm (page 8, lines 15-21). The second stage employs a high pressure or medium pressure mercury lamp that is known in the art to output between 200-400 nm (page 8, lines 21-26). Thus, WO '651 discloses a method as set forth in instant claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1711

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 92/15651. WO '651 teaches sequential irradiation using low intensity irradiation followed by high intensity irradiation for production of acrylic based adhesives. The first stage is preferably performed with fluorescent black lamps having an output between 300-400 nm (page 8, lines 20-21). The second stage employs a high pressure or medium pressure mercury lamp (page 8, lines 21-26). Mercury lamps are known in the art to output between 200-400 nm. WO '651 teaches that the type of lamp useful depend on the photoinitiator that is used (page 8, lines 15-19). The photoinitiator specifically disclosed by WO '651 is 2,2-dimethoxy-2-phenylacetophenone.

It would have been obvious to one skilled in the art at the time of the invention to select a fluorescent black lamp to perform a first stage of irradiation, as taught by WO '651, because WO '651 teaches that the first stage in the disclosed process is preferably performed with fluorescent black lamps having an output between 300-400 nm. It would have been obvious to one skilled in the art at the time of the invention to select a mercury lamp providing wavelengths in the range including 254 nm because the photoinitiator 2,2-dimethoxy-2-phenylacetophenone has a high molar extinction coefficient at 254 nm. See the Ciba trade literature "Extinction Coefficients of Ciba Photoinitiators" attached to this Office Action. WO '651 provides motivation by teaching that the type of lamp that is useful depends on the photoinitiator that is used. The limitations of claims 22 and 23 are considered to be inherent properties of the radiation sources disclosed in the reference in the absence of evidence to the contrary.

Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Palazzotto et al or Williams et al in view of Martens et al (4,181,752). The teachings of the references are as discussed above. Each of Palazzotto et al and Williams et al teaches using fluorescent lights and/or flood lamps to provide exposure to light having long wavelengths and using lasers or other monochromatic light sources to provide light sources of substantially different wavelengths (Williams et al: column 19, lines 3-24 and

Art Unit: 1711

lines 32-36, and the examples and Palazzotto et al: column 17, lines 46-67, column 18, lines 10-15, and the examples). Martens et al teach the characteristics of different light sources, including fluorescent black lamps and germicidal mercury lamps. See column 3, lines 34-56, column 4, lines 21-28, column 5, lines 9-41, column 6, line 21, to column 7, line 58, Examples 1-22 and Tables II-V.

With respect to the limitations of claims 25-26, It would have been obvious to one skilled in the art at the time of the invention to determine the optimum fluence rates of radiation required to obtain the desired degree of polymerization (conversion of monomers) for a particular composition. One of ordinary skill in the art at the time of the invention would have been motivated by the teaching of coating thickness and line speed taught by the Palazzotto et al or Williams et al in the examples and the teaching of process variables and rate of polymerization of Martens et al. One of ordinary skill in the art at the time of the invention would have been motivated by a reasonable expectation of providing pressure sensitive adhesives having the desired properties.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takahira et al (6,299,975) discloses psa sheets prepared by photopolymerization using a UV ray source, such as a low pressure mercury lamp.

Art Unit: 1711

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan W Berman whose telephone number is 703 308 0040. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703 308 2462. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.



Susan W Berman
Primary Examiner
Art Unit 1711

SB
11/1/03